Kepekatan partikel temafas (PM10) dan plumbum temafas dalam udara ambien di kawasan bandar dan luar bandar

ABSTRACT

The objective of this study is to determine the concentration of respirable particles (PM10) and the concentration of respirable lead in the ambient air of the Klang Valley (Kuala Lumpur), Kemaman and Setiu (Terengganu). Five locations that have been selected for this study are namely, Sek. Keb. Jln. Raja Muda, Sek. Keb. Kampung Baru and the Medical Faculty in UKM are representing the Klang Valley areas. Kuala Lumpur is identified as the urban area (polluted) where as Sek. Keb. Bukit Kuang, Kemaman and Sek. Keb. Rhu 10, Setiu, Terengganu represents rural area (less polluted). Sampling was conducted between the months of June until October 1996. Air sampling was conducted using Minivol. PM10 concentration on the filter paper is measured using the gravimetric method where as lead concentration is observed using Graphite Furnace Atomic Absorption Spectrophotometer. The results of the study showed mean PM10 concentration in Sek. Keb. Jln. Raja Muda is 322.50 ε g/m3, Sek. Keb. Kampung Baru is 515.36 ε g/m3, Medical Faculty of UKM is 225.50 ε g/m3, Sek. Keb. Bukit Kuang is 147.39 mg/m3 and Sek. Keb. Rhu 10 is 73.70 ε g/m3. A significant variance difference was seen in the PM10 concentration (F=8.573, p<O0.001) in all five sampling locations. Mean lead concentration in Sek. Keb. Jln. Raja Muda is 0.093 µg/ m3, Sek. Keb. Kampung Baru is 0.146 ε g/m3, Medical Faculty of UKM is 0.071 ε g/m3, Sek. Keb. Bukit Kuang is 0.027 ε g/m3 and Sek. Keb. Rhu 10 is 0.015 ε g/m3. A significant variance difference was also seen in the lead concentration (F=20.978, p<0.001) in all five locations. The results of this study found respirable lead concentration in PM10 is about 0.029% (urban) and 0.019% (rural). 1n addition, analysis results showed a significant relationship between the PM10 concentration and lead for all five study locations (r=0.675, p<0.001), urban area (r=0.648, p<0.001) and rural area (r=0.946, p<0.001).

Keyword: Concentration of respirable particles (PM10); Concentration of respirable lead